

## CLAIMS

*Sub A1* 1. A hinge for an orthopedic splint comprising:  
5 an upper plate and a lower plate connected for pivotal movement, a detent  
element supported on said upper plate and displaceable into and out of an  
engaged condition thereby to lock the two plates against said pivotal movement  
in a selected angular relationship relative to each other, a spring normally urging  
said detent into said engagement, cover means protecting said detent element  
10 against displacement out of said engagement by an unaided hand, and an  
aperture in said cover sized and disposed for admitting a tool end operative for  
displacing said detent out of said engagement against said urging of said spring  
and thus to free the plates for said pivotal movement, whereby tampering with  
the angular setting of said hinge by a patient wearing said orthopedic splint is  
15 discouraged.

*Sub A2* 2. The hinge of Claim 1 wherein said detent is displaceable in a guide way  
defined between said upper plate and said cover means.

20 3. The hinge of Claim 2 wherein said spring is contained in said guide way.

*Sub A2* 4. The hinge of Claim 3 wherein said spring is a coil spring compressed between  
said spacer and said detent.

25 5. The hinge of Claim 1 wherein said detent is engageable with a toothed edge  
on said lower plate.

30 6. The hinge of Claim 1 wherein said aperture is a slot aligned with a direction of  
displacement of said detent, said slot being sized and dimensioned to allow  
visual confirmation of engagement of said detent with said toothed edge.

7. The hinge of Claim 1 wherein said detent has a tool end receptacle adapted to receive the said tool end thereby to facilitate displacement of said detent by means of a said tool end.

5 8. The hinge of Claim 1 wherein said pivotal movement comprises an arc including a zero angle position at an intermediate location along said arc, such that said plates may be moved through substantial angular ranges on either side of said zero angle position.

10 9. The hinge of Claim 8 wherein said zero angle position is centered along said arc such that said plates may be pivoted through equal angular ranges on either side of said zero angle position.

15 10. The hinge of Claim 9 wherein said plates are aligned in a straight line in said zero angle position.

20 11. The hinge of Claim 1 further comprising a locking element removably engageable with said detent for holding said detent out of said engagement thereby to facilitate adjustment of the plates to a desired angular relationship.

12. The hinge of Claim 11 wherein said locking element is threaded for engagement with said detent.

25 13. The hinge of Claim 12 wherein said locking element is a screw engageable in a threaded screw hole defined in said detent, such that an end of said screw bears against said upper plate or engages with a hole in the upper plate thereby to hold said detent against said urging of said spring.

30 14. The hinge of Claim 1 further comprising range setting means engageable by said detent, said range setting means being adjustable for limiting said pivotal movement to a greater or lesser arc in a disengaged condition of said detent.

15. The hinge of Claim 14 wherein said range setting means comprises a pair of wheels turning concentrically with said pivotal movement of the plates, each of said wheels having a wheel edge engageable by said detent for locking the  
5 wheel relative to said upper plate, and a stop on each of said wheels operative for limiting pivotal movement of said lower plate relative to said upper plate in one direction of movement, a stop pin on said lower plate being disposed between the two stops such that the range of pivotal movement between the plates may be set by the angular spacing between the two stops when said  
10 detent is engaged for locking said wheels against rotation relative to said upper plate.

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15 16. The hinge of Claim 1 further comprising directional markings in said tabs as a visual indicator for assisting a therapist in determining the relative positions of the tabs during adjustment of the hinge.

17. The hinge of Claim 1 wherein said cover includes a spacer mounted to said upper plate and defining a guide way for said detent and a cover plate for containing said detent in said guide way.

20 18. A hinge for an orthopedic splint comprising:

an upper plate and a lower plate connected for pivotal movement, a detent element supported on said upper plate and displaceable into and out of an engaged condition thereby to lock the two plates against said pivotal movement  
25 in a selected angular relationship relative to each other, a spring normally urging said detent into said engagement, wherein said pivotal movement comprises an arc including a zero angle position at an intermediate location along said arc, such that said plates may be moved through substantial angular ranges on either side of said zero angle position.

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19. The hinge of Claim 18 wherein said zero angle position is centered along said arc such that said plates may be pivoted through equal angular ranges on either side of said zero angle position.

5 20. The hinge of Claim 19 wherein said plates are aligned in a straight line in said zero angle position.

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21. The hinge of Claim 18 further comprising cover means protecting said detent element against displacement out of said engagement by an unaided hand, and an aperture in said cover sized and disposed for admitting a tool end operative for displacing said detent out of said engagement against said urging of said spring and thus to free the plates for said pivotal movement, whereby tampering with the angular setting of said hinge by a patient wearing said orthopedic splint is discouraged.

15 22. A hinge for an orthopedic splint comprising:  
an upper plate and a lower plate connected for pivotal movement, a detent element supported on said upper plate and displaceable into and out of an engaged condition thereby to lock the two plates against said pivotal movement in a selected angular relationship relative to each other, a spring normally urging said detent into said engagement, and a locking element removably engageable with said detent for holding said detent out of said engagement thereby to facilitate adjustment of the plates to a desired angular relationship.

20 23. The hinge of Claim 22 wherein said locking element is threaded for engagement with said detent.

25 24. The hinge of Claim 23 wherein said locking element is a screw engageable in a threaded screw hole defined in said detent, such that said screw engages said upper plate thereby to hold said detent in a disengaged condition against said urging of said spring.

25. The hinge of Claim 24 wherein said screw is removable from the splint thereby to discourage tampering with the detent or may be left in place and tightened to secure said detent in said engaged condition.

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26. A hinge for an orthopedic splint comprising:

an upper plate and a lower plate connected for pivotal movement, a detent element supported on said upper plate and displaceable into and out of an engaged condition thereby to lock the two plates against said pivotal movement in a selected angular relationship relative to each other, a spring normally urging said detent into said engagement, a pair of wheels turning concentrically with said pivotal movement of the plates, each of said wheels having a wheel edge engageable by said detent for locking the wheel relative to said upper plate, and a stop on each of said wheels operative for limiting pivotal movement of said lower plate relative to said upper plate in one direction of movement, said pin on lower plate being disposed between the two stops such that the range of pivotal movement between the plates may be set by the angular spacing between the two stops when said detent is engaged for locking said wheels against rotation relative to said upper plate.

